

What Is Claimed Is:

1. A test strip reader comprising:
  - an optical sensor with an imaging array of pixels;
  - a light source;
  - a channel configured for receiving a test strip to be imaged by the test strip reader and for guiding the insertion and removal of the test strip with respect to the optical sensor, the test strip comprising optically detected information;
  - a lens positioned with respect to the imaging array and the light source to focus light from the light source that has been reflected from the test strip onto the imaging array, the optical sensor being operable to determine change of direction data corresponding to the position of the test strip with respect to the optical sensor; and
  - a processing device connected to the optical sensor for using the change of direction data to determine the position of the test strip with respect to the test strip reader, and for determining at least one of the optical absorptions of the information on the test strip, and diagnostic significance of the information on the test strip, with respect to the corresponding the position of the test strip with respect to the test strip reader.
2. A test strip reader as claimed in claim 1, wherein the processing device is programmable to determine an average pixel value of at least part of a selected captured image by the imaging array and to store the average pixel value with data relating to the corresponding position of the test strip with respect to the test strip reader when the captured image was captured.
3. A test strip reader as claimed in claim 2, wherein the processing device is programmable to generate and store a plurality of average pixel values with data relating to the respective positions of the test strip with respect to the test strip reader, and to locate indicia on the test strip using the stored average pixel values and the data.
4. A test strip reader as claimed in claim 3, wherein the processing device is programmable to calculate the most likely target value of at least part of a selected captured image by the imaging array, and to store the most likely target value in a memory array mapped to the position of at least one of the indicia.

5. A test strip reader as claimed in claim 1, wherein the optical sensor and the processing device are provided in an optical mouse engine.
6. A test strip reader as claimed in claim 1, wherein the processing device is programmable to determine if the test strip has been completely read by the optical sensor using data relating to the position of the test strip with respect to the test strip reader.
7. A method of reading indicia from a test strip comprising the steps of:
  - moving a test strip relative to an imaging array of pixels, the test strip comprising optically detected information;
  - imaging at least part of the test strip using the imaging array of pixels;
  - generating change of direction data corresponding to the distance, rate and direction the test strip is moved relative to the imaging array;
  - using the change of direction data to determine the position of the test strip with respect to the test strip reader; and
  - determining at least one of the optical absorptions of the information on the test strip, and diagnostic significance of the information on the test strip, with respect to the corresponding the position of the test strip with respect to the test strip reader.
8. A method as recited in claim 7, further comprising the steps of:
  - determining an average pixel value of at least part of a selected captured image by the imaging array; and
  - storing the average pixel value with data relating to the corresponding position of the test strip with respect to the test strip reader when the captured image was captured.
9. A method as recited in claim 8, further comprising the steps of:
  - generating and storing a plurality of average pixel values with data relating to the respective positions of the test strip with respect to the test strip reader; and
  - locating indicia on the test strip using the stored average pixel values and the data.
10. A method as recited in claim 9, wherein the indicia comprises at least one of a reference line, a test line, and a control line, and further comprising the step of sensing thresholds for each

of the reference line, the test line, and the control line to determine if the test strip has been completely read by the test strip reader.

11. A method as recited in claim 9, further comprising the steps of:  
calculating the most likely target value of at least part of a selected captured image by the imaging array; and  
storing the most likely target value in a memory array mapped to the position of at least one of the indicia.
12. A method as recited in claim 11, further comprising the step of generating a most likely target value strip plot using a plurality of the stored values in the memory array.
13. A method as recited in claim 7, further comprising the step of determining if the test strip has been completely read by the optical sensor using data relating to the position of the test strip with respect to the test strip reader.